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new place the feeling, "I have been here before," but which in this case takes the form, "I have already dreamed this, or had a presentiment of it, or it has been prophesied to me." Outside of dreams, where the experience is not infrequent with some people, it is difficult to get perfectly clear cases, for it can rarely be proved absolutely that the person reporting such a coincidence has not happened to have such a dream or presentiment before the event in question. The explanation is, however, extremely plausible, has indirect evidence, and a very extensive explaining power. Under the fourth heading Prof. Royce gives a few cases in which a thought, dream, or presentiment of one person coincided more or less closely with an experience of some other person. Of these cases, 3 are supported by documentary evidence, 4 by strong testimony without documents, and 5 are of less certainty.

NOTES.

Exner and Paneth (*Pflüger's Archiv*, XL, p. 544), repeating the experiments of Marique, found that when those parts of the brain of the dog which contain the motor cortical fields for the extremities are cut around, so as to sever their association-fibers but not their projection-fibers, care being taken to injure as little as possible the blood-vessels of the pia mater, the dog showed all the symptoms which follow complete extirpation of the same part. The authors attribute the atrophy which sets in, in part to disturbances of nutrition, and in part to the separation of the association-fibers. As in the case of extirpation, nearly complete recovery of function takes place after a few weeks or months.

The paralytic brains among those of 453 East-Prussian insane studied by Dr. Julius Jensen (*Archiv f. Psychiatrie*, Bd. XX, H. 1), showed a deficiency in weight of about 20 grams for each year of disease. The atrophy, as indicated by the weight of the separate parts (divided according to Meynert's method), seems to spread over the mantle from in front; the axial portions are also much affected. In melancholia the frontal portions are not affected, though the mantle as a whole is light. The normal proportion of the mantle in 1000 parts is 785.82, in melancholiac men 780.01, in melancholiac women 779.31. Taken altogether the figures show the right half of the brain heavier than the left.

Dr. Tigges has studied in the same way the brain weights of 123 insane men and 127 insane women in Sachsenberg (*Zeitschr. f. Psychiatrie*, Bd. XLV, H. 1-2). The average weight with membranes was respectively 1362.3 and 1243.6 grams, the variation of the individuals from the mean being greater with the insane than the sane. The averages for different forms of alienation for the men were: mania, 1430.7; melancholia, 1392.8; primary forms in general, 1402.3; secondary forms in general, 1401.3; simple psychoses, 1401.7; paralysis, 1283.7; epilepsy, 1362.3; in the last there was con-

siderable variation. For the women the weight after melancholia was higher than after mania, and the difference between primary and secondary forms greater. The brains of female epileptics were relatively heavier than those of the males, and of female paralytics, lighter. Rather heavy brains were found after periodic insanity; men, 1400.3; women, 1347.5. Taken separately, the brain mantle was a little heavier in proportion to the whole in the men; the cerebellum and axial portion a little heavier in the women. The mantle is relatively light in the insane, the remainder of the brain heavy. Most of the male brains were heavy in the tempero-occipital and parietal regions, the female in the frontal, but there were not a few exceptions. Tigges, like Jensen, found the frontal portion heavy after melancholia, very light after paralysis; heavy also in delusional insanity and light in mania—suggestive facts, in his opinion, in view of some features of these troubles. In epilepsy the proportions are irregular. The right hemisphere in the insane was found, as above, heavier than the left, and more so than in the sane; the frontal portion was always heavier on the right, and the parietal and tempero-occipital on the left, except in primary psychoses. The difference of the hemispheres was greatest in idiocy, epilepsy and paralysis, where also the left was frequently the heavier. The period of greatest weight for the male was from 30 to 80 years, for the female 40 to 70. The weight of the brain increased with the length of the body, faster in women than men, though the weight as compared with the length was greater in men. From a comparison of his results with those of others Tigges is inclined to believe in different average weights for the different German populations.

After two years' experiments as to the optical disturbances following lesions of the cortex in monkeys and dogs, Lannegrace has arrived at a set of results quite at variance with those now accepted (vide *Archives de méd. expériment. et d'anat. pathologique*, Jan., 1889). Instead of finding such disturbances only after injury to the occipital region and adjacent parts, he finds hemiopia after injuries in almost any part of the cortex (the occipital region being an important but not an exclusive center), and crossed amblyopia after injuries to a limited area in the parietal and frontal regions. Lannegrace himself notes the difficulties of determining the exact nature of the visual effects produced and the frequency with which the experimenter is obliged to depend on general impressions. In these, perhaps, lies the secret of the differences.

H. J. Hamburger (*Feestbundel van Donders*, 1888) experimented on the time necessary to produce a perceptible change in the color of the visual purple in the eyes of frogs. For the different parts of the spectrum, the time required was, in hours,

C	D	E to b	b $\frac{1}{2}$ to F	F
40	20 $\frac{1}{2}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	14

And when the width of the slit was made inversely proportional to these times, then lights of all wave-lengths produced a just perceptible change in seven and one-half hours.

When one looks with the head inclined to one side at a bright vertical line in the dark, the line appears inclined to the opposite side. This phenomenon, discovered by Aubert, has been explained

by him and by Helmholtz as due to an under-estimation of the deviation of the head, the rolling of the eyes under such circumstances being insufficient to account for it. M. E. Mulder, who has recently given attention to the subject (*Feestbundel van Donders*, 1888, p. 340), though in doubt as to the true explanation, thinks this one at least insufficient. He finds that even when the head is known to be horizontal, the illusion amounts to 20° or 30° . It does not vary in accord with the errors made in estimating the position of the body when inclined to one side or the other in a movable box. If the eyes are closed for an instant and then opened, it is at first less, but presently regains its former amount. It varies with the individual from 10° to 60° , and with the inclination of the head. It persists in spite of practice.

In an inaugural dissertation, *Ueber die Messung der Tonstärke* (Berlin, 1888), M. Wien has described a new phonometer and a series of interesting experiments executed with it. Applied to the testing of Weber's law, the apparatus gave with a tone of 440 vibrations the following values for the discriminative sensibility:

Intensity.	Discrim. Sens.	Intensity.	Discrim. Sens.
Circa 1.6	(Threshold)	Circa 10^6	.140
5	.136	10^7	.153
20	.108	10^8	.161
10^2	.112	10^9	.178
10^3	.118	10^{10}	.225
10^4	.116	10^{11}	.350
10^5	.131		

The discriminative sensibility is thus finer for tone than for noise (that usually measured); it is finest for an intensity about ten times the threshold value; and gradually becomes blunter as the intensity increases. Weber's law holds approximately for a part of the series. The power of discrimination was found to be strongly affected by the pitch of the tone. The absolute changes of pressure at the threshold are given at $0.59 \mu\mu$ of mercury, and the amplitude of the vibrations of the air particles at $0.066 \mu\mu$ ($\mu\mu$ being one millionth of a mm.), a value about one-seventh that given by Lord Rayleigh. The energy at the threshold is estimated at about six times that for sight (e. g. seeing a star of the sixth or seventh magnitude). The intensity of the first over-tone in the vowels, when the fundamental was represented by from 15 to 20, was about as follows: a 7, e 11, i 12.5, o 25, u 3.5, ü 5, and ä 10. In large open spaces the intensity of a tone decreased in close approximation to the increase of the square of the distance.

The following explanation of the function of the arches of Corti is given by Dr. C. Brückner in *Virchow's Archiv*, Bd. CXIV, H. 2. The physicists have shown that the tone of a vibrating rod, fixed at the middle, descends as the ends are bent around into the shape of a tuning-fork. Brückner himself got a somewhat similar result from rods fixed at the ends. Now the Corti arches at the base of the cochlea are small and little spread, those at the upper end large and much spread. The size and shape therefore work at cross-purposes, approximately compensate each other, and bring it about that all the arches can vibrate to each of the strings of the basilar membrane, like the sounding-board to the different strings of a piano.

In the same paper the author records an observation in support of the separateness of the organs for hearing noises and tones, which, though it is far from decisive, has been frequently made by him, and is not without interest. On waking during the striking of a clock, he hears first a continuous musical tone, and only at the last the noise of the single hammer-strokes—in his opinion, because the tonal organ awakes first.

In a recent article on Ataxy and Muscle-sense (*Zeitschr. f. klin. Medicin*, XV, 1-2; cf. abstract of an earlier communication, this JOURNAL, Vol. I, p. 324), Goldscheider has undertaken an investigation of the senses that mediate muscular co-ordination. He treats the subject under these heads: (1) feeling of passive and (2) active movements, (3) the perception of position, and (4) the sensation of weight and resistance. (1) A passive bending of the finger (at the second joint from the end) is perceived when it has reached $0.60-1.74^\circ$, and the perception is due, not to the slight sensation of pressure caused in moving the finger, but to sensation in the region of the joint; for, when the first is in a measure destroyed by faradizing the last phalanx, the perception of motion is practically the same, but when the joint is faradized the perception is much less acute. Indeed, when the electric stimulation is not applied, careful observation can distinguish one sensation from the other. That the sensation is chiefly in the joint and not in the skin about it is shown by the fact that when the skin was made insensible by faradizing, a motion of 3.14° could yet be perceived. The rapidity of motion is also of influence. (2) The results are the same in general for active motion, sensations in the tendons (which are here more important than in passive motions) perhaps accounting for the somewhat finer perceptions. The author is inclined to exclude muscle-sensations proper, because on tetanizing a muscle they do not appear till the contraction is much greater than the amount in question. The beginning of a motion does not require muscle-sensations, and when it is once begun the various sensations accompanying motion make it unnecessary. He would not, however, deny their existence in certain muscles of the eye and others not producing motion in a joint. He found also that while an idea of motion could be voluntarily called up without actual motion, the idea of the sensation of motion could not be. (3) The sense of position comes from the tendons and their connections and from the skin; and the author does not believe that the sensation of motion is derived from that of changing position, but considers it an independent and primary sensation. (4) He holds the sensation of weight as also peripheral. These sensations give the data for muscular co-ordination; ataxy is a result of their more or less complete absence. Bendings and straightenings of the faradized finger intended to be of a certain extent and rate were found to be irregular, too great, and too rapid. A greater motion is necessary under such circumstances to give a sensation equal to that experienced in the normal finger. The irregularities, the extent and the rate were increased by attention to the motion, but decreased when it was followed with the eye. The ataxic gait the author attributes to a decline of the sensations of movement in the knee and hip joints and of the sensations of tension in the tendons. This hinders co-ordination of antagonistic muscles; and with it probably co-operates the lowering of muscle tonus.

The distinct forms of periodic insanity so far recognized Professor Mendel would gather under the three heads of mania periodica, melancholia periodica, and delirium hallucinatorium periodicum. To these he would add paranoia periodica, and describes three cases in which the typical hallucinations and delusions of persecution and grandeur were present in periodic attacks. There was no delirium; one of the cases, a merchant, was able to attend to his business. A fourth case is also added, that of a man who, after nine periodic attacks of melancholia, had one of mania with initial melancholia, then one of melancholia with illusions and delusions, and finally a twelfth of full paranoia. (*Allg. Ztschr. f. Psychiatrie*, 1888, Bd. XLIV, H. 6.)

An interesting case of *folie à deux* is reported by Dr. M. J. Nolan in the *Journal of Mental Science* for April, 1889. The patients were brothers, both weak-minded, the younger infected by the older, he by his mother, and she by her husband. The two sons had lived together in almost complete seclusion, taking care of their mother, bed-ridden for seven years. The resulting similarity of mind was very great. After three months of separation at the asylum, they simultaneously announced the same delusion, agreeing even in details, and on another occasion dreamed the same night at nearly the same time of seeing their mother. The author takes the case as evidence that the identical ideas in this disease are not always communicated.

In the *Journal of Mental Science* for April, 1889, John Baker, M. B., discusses the incendiarism of the insane, chiefly on the basis of cases from the Broadmoor Asylum. From 1864 to 1886, 95 men and 8 women, respectively 7.5 and 2 per cent of the total commitments, were received for arson. Continental experience gives a larger proportion of women, many being servant-girls between 12 and 18 years old. The distribution among the forms of insanity was as follows: congenital imbecility 36, melancholia 21, congenital epilepsy 4, general paralysis 6, acute mania (usually *à potu*) 6, recurrent mania 4, chronic mania 7, monomania 9, dementia 10. While admitting a connection between insanity and a propensity for fire-setting, the author concurs in the generally accepted opinion against an instinctive "pyromania," and in favor of a more frequent connection with the reasoning forms of insanity.

In the brain and cord of dogs after acute intoxication with ethyl or amyl alcohol, W. Tschysch finds no histological changes; but regularly after chronic intoxication, puntiform hemorrhages, especially in the gray matter of the cord, together with exudation of plasma, degeneration and destruction of the nerve-cells, chiefly in the neighborhood of the vessels. The kind of lesion is the same with either alcohol, but the amylic is fatal in smaller doses. (Report of Proceedings of III Congress of Russian Physicians, 1889, *Neurolog. Centralbl.*, No. 7, 1889, p. 209.)

A case of etheromania is reported by Ritti in the *Annales médico-psychologiques*, Jan., 1888. The victim was a woman of about 40, well educated, but of unfortunate heredity. At 22 ether had been prescribed for gastralgia and weakness, and she had become dependent

upon it, but had been able to break off. When prescribed at this later period for similar troubles attending metrorrhagia, she was not able to break off and came to use more than 200 g. a day. As her means failed she was reduced to street-begging to procure the intoxicant, and was found in public places stupefied from inhaling it. She was arrested and pronounced insane. Under compulsory abstinence she recovered in about six months, with one relapse. The effect of the ether was like morphine in giving the woman a liveliness and talkativeness quite different from her ordinary taciturnity, also in its abstinence phenomena, and the imperious nature of the craving it created.

Alcoholic paralysis has generally been considered a disease of the peripheral nerves, though degenerations have occasionally been found in the cord. Dr. Karl Schaffer observed in the cord of a female drunkard (*Neurolog. Centralbl.*, No. 6, 1889), who in life had been paralysed in the lower limbs, atrophy or sclerosis of the greater part of the cells in the anterior horns in the lumbar region, amyloid concretions diffusely scattered through the whole cord (thickest in the posterior columns), and apparent atrophy of single cells in the columns of Clarke. The anterior and posterior roots were normal, as were also the greater portion of the cells in the cervical region. The peripheral nerves could not be examined. Of nearly the same tenor were the findings in a case reported by Dr. A. Erlitzki to the Congress of Russian Physicians (reported in the *Neurolog. Centralbl.*, No. 7, p. 210). The very evident central effects of alcohol (drunkenness and psychic disturbances), with the degenerations in this and a similar case of Kahler and Pick's, lead Erlitzki to the opinion that the beginnings of alcoholic paralysis are in the cord.

To the happily small list of cases of delirium tremens in childhood, Dr. E. Cohn adds another case (*Berl. klin. Woch.*, No. 52, 1888). The patient was the five-year-old son of a saloon-keeper, who had been given, with all good intention, a glass of "Luft" (cummin brandy?) every day by his grandfather, some Hungarian wine by his mother, and had gotten besides more or less beer and sometimes an extra glass of "Luft." He was run over and brought to the hospital with a broken leg. The next day the delirium appeared accompanied by pronounced tremor, but with a dose of chloral hydrate was over in 24 hours. The leg healed well, the child in the meantime having had the measles. The close sequence of the delirium upon the injury and the withdrawal of alcohol, its short duration, and the tremor connected with it, are worthy of notice.

In a case of alexia of Dr. Brandenburg's (*v. Graefe's Archiv f. Ophthalm.*, 1888, XXXIII, 3), the patient, while unable to read words, was able to read Arabic numerals. Dr. Brandenburg explains this exception somewhat as follows. When an uneducated man, like the patient, reads, it is necessary that the center of visual images, the center of auditory images of the letters (since he spells in reading like a child), and the center of speech-movement images should all be put in action, before the word that is read becomes an idea. With an educated man, on the contrary, the process is short-circuited and the word becomes an idea at once. This patient was in the latter state

as regards numerals; though the roundabout way was broken, the other direct way was still intact. There is, however, some reason to conjecture a distinct location for number images; at least Oppenheim mentions a case in which disease of the right hemisphere was accompanied by loss of them.

In the *Deutsches Archiv f. klin. Med.*, XLIII (1888), 4-5, Dr. A. Knoblauch reports the case of a girl six years old, suffering apparently from encephalitis, with right hemiplegia and aphasia, who, at a time when she was quite unable to speak voluntarily or at dictation, retained the power to sing the words of a familiar tune. Even if such speech is automatic and may be mediated by the right hemisphere, the mechanism of tracts and centers by which this is done is still to be discussed. Into this theoretical question the author goes with fullness, deducing from his schema the disturbances of the musical faculty, and naming them after the analogy of those of speech, e. g. "amusia," corresponding to motor aphasia, "paramusia" to paraphasia, "tone-deafness," "note-blindness," etc. Some of them he is able to parallel with symptoms from cases on record.

For the cerebral weakness corresponding to neurasthenia, Prof. Finkelnburg suggests the term *phrenasthenia* (Jahressitzung des Vereins der deutschen Irrenärzte: *Allg. Zeitschr. f. Psychiatrie*, Bd. XLV, H. 5-6). The characteristic of phrenasthenia, as of neurasthenia, is the ready exhaustibility of the patient, though this is obscured in the first by the fact that it may affect either the active functions or those of inhibition, and give rise to a torpid or an erethic form. In the discussion that followed, Professor Mendel confessed himself a heretic on the doctrine of neurasthenia, believing the name to cover a group of functional neuroses. In Finkelnburg's analysis of phrenasthenia he saw a return movement toward the scientific standpoint. As evidence of the near connection of neurasthenias with actual insanity, Dr. Knecht mentioned a case in which torpid asthenia, erethic asthenia, and good health alternated like the stages of depression, excitement, and the lucid interval in circular insanity.

Evidence accumulates that men, even those in virile occupations—blacksmiths and soldiers—may be subject to hysteria. At the Congress of Russian Physicians at St. Petersburg, January 3-10, 1889 (*Neurolog. Centralbl.*, No. 7, 1889, p. 209), Dr. Oseretzkowski made further reports of his studies in the Moscow Military Hospital. He has now records of 38 cases (33 privates, 5 officers) in which the disease appears in its protean forms of paralyses, contractures, convulsions, mutism, etc. The doctor deprecates the tendency to regard hysteria in soldiers as simulation. The case of a merchant thus affected was also reported in the session of February 23, 1889, of the Association of Physicians of Budapest (*ibid.* p. 216).

In the January number of *Brain*, Dr. Wiglesworth and Thos. H. Bickerton report further investigation of the relation of epilepsy to errors of ocular refraction. In 103 unselected insane and imbecile cases they found 48 in which there was noticeable error. The percentage among the imbecile was a little less than among the other insane, indicating, as far as a small number of cases may, that these anomalies are not to be charged to general degeneration. These

cases were not suited to the further step necessary to prove a causal dependency of epilepsy on errors of refraction, *i. e.* the cessation of the fits after correction of the errors, but in nine cases reported from private practice, all showing errors; some success was met. The authors do not, of course, regard the strain coming from these errors as more than an exciting cause to otherwise unstable nervous systems.

In spite of much investigation, the function of the thyroid gland and the manner in which the disturbances that often follow its removal are caused remain as yet uncertain. Th. Drobnick (*Archiv f. exp. Patholog.* XXV, p. 136), after operating upon 8 dogs, 3 of which survived, concludes that the gland is not essential to life, and that the disturbances of circulation and respiration, the convulsions, pareses, etc., that follow its extirpation, depend upon the excitation, directly or reflexly, of the neighboring nerves. The troubles are rather to be compared to tetanus than *cachexia strumipriva*. H. Schwartz, who has studied the relation of the sequelae to tetanus (*Inaug. dis.*, Dorpat, 1888) believes that they may be related in causation, but are not identical. Munk explains their genesis, in reporting further studies on the subject (*Sitzber. d. kgl. preuss. Akad. d. Wiss.* 1888, XL, p. 1059), as due to injury of the nerves lying near the gland; this causes disturbances of circulation and respiration, which in turn bring about mal-nutrition of the central nervous system, whence the convulsions, etc. To this points the fact among others that similar disturbances can be produced by injecting dilute croton oil into the region of the gland. To another experimenter (Rogowitch: *Archives de Physiol. norm. et patholog.* (4), II, p. 419), the results seem like those of a nerve poison, say of phosphorus. This poison, as he thinks, arises in normal processes and is counteracted by the gland. In this function the pituitary body can to a certain extent act vicariously. Clinical opinion as to the dependence of myxoedema on loss of the gland seems almost equally at variance (see a number of articles abstracted in the *Neurolog. Centralbl.* No. 5, 1889).

Dr. P. Grützner argues in the *Deutsch. med. Wochenschr.* 1889, No. 1, that the experiments of Munk and others, who have found no serious disturbances after removal of the thyroid gland, are inconclusive because there are frequently many little accessory glands widely scattered through the adjacent parts. In some fatal cases these have been found; in some cases of recovery also they have been present and enlarged. He believes on the whole that the disturbances cannot be explained by simple injury of the nerves, but that in addition a special toxic substance is developed, either in the wound or elsewhere in the body; and if the latter, the causal connection with the removal of the gland may be assumed.

In the February number of *Education*, Dr. C. F. Crehore gives a brief sketch of a system of anthropological measurements for use in schools. It includes both physical and mental measurements, and would, no doubt, lead to the collection of valuable information, though it might, perhaps, be improved. An adoption of the scheme used by Galton, or an addition of the points in which his differs, would give opportunity for most desirable combinations of data. The political economists have frequently found international comparisons impossible from such differences in the schemes by which their statistics are gathered.